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AF/ GP2614

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Chris Warren Patten et al.

Appln No.: 09/493,917

Filed: January 28, 2000

Title: Method and Apparatus to Perform Automatic Digital Convergence

Art Unit: 2614

Examiner: Brian P. Yenke

Docket No.: 50N3426

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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

PETITION UNDER 37 CFR 1.136(a) AND APPEAL BRIEF UNDER 37 C.F.R. §1.192

Sir:

Applicants hereby petition the Assistant Commissioner to grant a one (1) month extension of time, up to and including September 15, 2004, in which to file the enclosed Appeal Brief, which follows the Notice of Appeal filed via first class mail on June 11, 2004 (received by the US Patent and Trademark Office on June 15, 2004). Appellant's undersigned representative hereby authorizes the extension fee in the amount of $110 as well as the required fee for an Appeal brief set forth in 37 CFR 1.17(c) to be charged to deposit account No. 50-1047. In addition, any deficiencies may be charged to deposit account No. 50-1047.

As set forth in the Notice of Appeal filed by first-class mail on June 11, 2004, Appellants hereby appeals the final decision of the Examiner in the above-identified application rejecting the subject matter of the pending claims. Appellant respectfully requests that the Board of Patent Appeals and Interferences reverse the Examiner's rejection of the claimed subject matter.

This Appeal Brief is filed in triplicate as required.

I. REAL PARTY IN INTEREST

Sony Electronics Inc. is the assignee of the present invention and the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are known to Appellant, Appellant's legal representative, or the assignees, which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

This application was filed with Claims 1-21.

Claims 6-7, 15-16 and 19 were canceled by an amendment after final rejection dated January 21, 2003, and Claims 20-21 were canceled in an amendment filed on June 23, 2003.

Claims 22-26 were added in an amendment dated November 14, 2003.

Claims 1-5, 8-14, 17-18 and 22-26 are now pending and stand finally rejected – Claims 1, 10 and 22 are the only independent claims remaining.

The rejection of claims 1-5, 8-14, 17-18 and 22-26 is appealed. The pending claims are set forth in Appendix A of this Brief.

IV. STATUS OF AMENDMENTS

A Final Office Action was mailed on March 11, 2004, rejecting Claims 1-5, 8-14, 17-18 and 22-26. A Response was filed subsequent to the Final Office Action on May 11, 2004, and in an Advisory Action mailed on June 7, 2004, the Examiner indicated that the request for reconsideration was considered but did not place the application in condition for allowance. A Notice of Appeal was filed by first-class mail on June 11, 2004, and received by the Patent and Trademark Office on June 15, 2004.

V. SUMMARY OF INVENTION

The application describes a method and apparatus capable of displaying a 16:9 aspect ratio signal on a 4:3 aspect ratio television, and vice-versa, while also performing autoconvergence on the displayed picture. More specifically, the method and apparatus performs autoconvergence by receiving the image having a first aspect ratio and a plurality of sides, displaying the image on a display having a second aspect ratio and at least one sensor corresponding to each side of the image, and moving the image so that each sensor can detect the corresponding side of the image.

VI. ISSUE

Appellant presents the following issue for review:

Whether the invention of Claims 1-5, 8-14, 17-18 and 22-26 is patentable in light of the rejection under 35 USC 103(a) as being unpatentable over US Patent 5,537,149 (Teraoka et al.) in view of Applicants' Figures 1 and 2 as filed.

VII. GROUPING OF CLAIMS

For purposes of this appeal, Appellant respectfully submits that the pending claims be considered in one group that may stand or fall together.

VIII. ARGUMENT

The Appellant respectfully submits that the claimed invention as defined in Claims 1-5, 8-14, 17-18 and 22-26 is not unpatentable over the prior art cited by the Examiner. Claims 1, 10 and 22 are independent.

Independent Claim 1

Independent Claim 1 is directed to a method for performing autoconvergence including the steps of (1) receiving an image having a first aspect ratio and a plurality of sides, (2) displaying the image on a display having a second aspect ratio and at least one sensor corresponding to each side of the image, and (3) moving the image as a single entire image, without increasing any of the dimensions of the image, so that each sensor can detect the corresponding side of the image.

Independent Claim 10

Independent Claim 10 is directed to a machine-readable medium whose contents cause a computer system to perform autoconvergence by performing the acts recited in independent Claim 1.

Independent Claim 22

Independent Claim 22 is directed to a method comprising (1) displaying an image having a first aspect ratio on a display having a second aspect ratio, the first and second aspect ratios being different, the display comprising a first sensor positioned at a first side and a second sensor positioned at a second side opposite the first side, and (2) moving the image as a single entire image, without increasing any of the dimensions of the image, so that the first and second sensors detect the image.

103(a) Rejection based on Teraoka and Figures 1 and 2

The final Office Action (dated March 11, 2004) takes the position that Teraoka "discloses a display device which receives either a 4:3 or 16:9 video signal and displays the received signal on a 16:9 or 4:3 display device respectively" and that the Teraoka system "expands or compresses the respective video signal, where the video signal is size adjusted to maintain the distance from the original vertical and horizontal center".

The final Office Action acknowledges that Teraoka fails to disclose "the display having sensors which detect the image and moving the image as a single entire image without increasing any of the dimensions of said image".

The final Office Action then states that Figures 1 and 2 "include sensors 108/208, 110/210, 112/212 and 114/214 to ascertain the position of the displayed image and assist in the adjustment of the displayed picture" and concludes that it "would have been obvious...to modify Teraoka....by using conventional sensors as admitted by applicant's Fig. 1,2, and moving an image, which may have been resized based upon the display or upon the users preferences, where the user may desire to reconvert the adjusted size image to its original size, in order to provide the user to view an image which is centered on the display".

Teraoka – US Patent 5,537,149

Teraoka is directed to a display device having a display screen of 16:9 aspect ratio for displaying fully a video image of 4:3 aspect ratio, and vice versa, without leaving a blank space. Teraoka includes circuitry for non-linearly expanding a horizontal display scale such that a rate of non-linear expansion is increased as a horizontal position within the image becomes distant from a horizontal center of the image, and circuitry for non-linearly compressing a vertical display scale such that a rate of non-linear compression is increased as a vertical position within the image becomes distant from a vertical center of the image (Abst.).

As acknowledged in the final Office Action, Teraoka does not teach or even suggest "the display having sensors", and, does not teach or suggest "moving the image as a single entire image, without increasing any of the dimensions of said image".

Figures 1 and 2

Figures 1 and 2 are directed to a picture of a 16:9 aspect ratio picture displayed on a 4:3 aspect ratio television display, and picture of 4:3 aspect ratio picture displayed on a 16:9 aspect ratio television display, respectively. In their discussion of Figures 1 and 2, Applicants note that "patterns are detected by, for example, sensors 108, 110, 112, and 114, which are placed at the top, bottom, left and right of the television display screen, respectively", and that "to perform autoconvergence the displayed picture must at least meet or overlap the sensors....[however], when a 16:9 aspect ratio picture is displayed on a 4:3 aspect ratio display, the top and bottom edges of the 16:9 aspect ratio picture do not meet or overlap the top and bottom sensors" (page 5, lines 7-14).

Discussion of Rejection based on Teraoka and Figures 1 and 2

As discussed by Applicants in their May 11, 2004 Response After Final Rejection, each of the independent claims recites a method for performing autoconvergence that includes moving an image as a single entire image, without increasing any of the dimensions of the image, so that sensors at the sides of the display detect the corresponding side of the image.

Applicants respectfully believe that the Examiner has failed to state a prima facie case of obviousness because the combination of Teraoka and Applicants' Figures 1 and 2 do not disclose or suggest "moving said image as a single entire image, without increasing any of the dimensions of said image" as recited in independent claim 1 and in similar language in independent Claims 10 and 22. Instead, Applicants respectfully believe that the Examiner is confusing an end result with the claimed manner of achieving that result.

As noted above, the Examiner admits that Teraoka does not disclose "moving said image as a single entire image, without increasing any of the dimensions of said image". In fact, Teraoka teaches away from this limitation because Teraoka discloses stretching or compressing an image non-linearly to maintain the center portion of the original signal. [Abst.] Applicants maintain that Figures 1 and 2 do not disclose or suggest this claim element because there is no mention of moving the displayed image without increasing any image dimensions in the text associated with these Figures.

The June 7, 2004 Advisory Action recites:

> "the applicant states that the examiner has failed to state a prima facie case of obviousness, where applicant believes the examiner is confusing an end result with the claimed manner of achieving the result. Initially the examiner would like to rely on the applicant's own disclosure which specifically states (page 5, line 17-19) "The movement of the image can be in the form of shifting the entire image towards the sensor, or alternatively, stretching the image so that the edges of the image can be detected by the sensors." The examiner relied on Teraoka which discloses movement of the image by stretching/compressing the image to maintain the center portion of the original signal. Given the broadest interpretation, the examiner interpreted the claims as displaying an image which has been moved where the displayed image is in its the original size. Regarding the applicant's statement of movement without increasing any of the dimensions. The question of obviousness is whether movement of an image without changing the size (increasing) or movement by changing the size are patentably distinct from each other. The examiner believes the two are not patentably distinct since they are obvious variations/modifications of performing the same function as stated in the applicant's disclosure, which states that movement can be performed in either manner. Thus the examiner maintains the rejection since the movement of an image by either changing or not changing the size, derive the same results, where neither method obtains unexpected results".

Appellants submit that the "movement of an image without changing the size" and "movement of an image by stretching or compressing the image (i.e., with changing the size), *are* "patentably distinct" from each other, and that the fact that Applicants listed both alternatives in the specification, as separate embodiments of the invention, does not render one "obvious" in light of the other. The alleged teaching in Teraoka of "*stretching* (or 'expanding') the image" simply does not fairly suggest the step of "moving said image as a single entire image, *without increasing any of the dimensions of said image*, so that each sensor can detect said corresponding side of said image".

Of course there is nothing inherently wrong in defining some part of the invention in functional terms, such as "so that each sensor can detect a corresponding side of an image". And, a "functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used" (MPEP 2173.05).

In this case, the teachings of Teraoka and Figures 1 and 2, to a person of ordinary skill in the art, fail to teach or suggest a method for performing autoconvergence that includes receiving an image having a first aspect ratio and a plurality of sides, displaying the image on a display having a second aspect ratio and at least one sensor corresponding to each side of the image, and moving the image *as a single entire image*, *without increasing any of the dimensions of the image*, so that each sensor can detect the corresponding side of the image.

It is therefore respectfully submitted that the combined teachings of Teraoka and Figures 1 and 2, when considered in any permissible manner, fail to render the pending claims unpatentable. More specifically, taking "into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made", Teraoka and Figures 1 and 2, separately or in any permissible manner, *fail to teach or suggest Applicants' claimed invention.* In fact, of all of the documents made of record in this application, it is *only* Applicants' disclosure that provides a teaching of the combined elements of each of independent Claims 1, 10 and 22.

The Examiner has made a 35 U.S.C. §103(a) rejection, yet has failed to provide the motivation that one of skill in the art would need to make such a combination, and further fails to provide the teachings necessary to fill the gaps in these references in order to yield the invention as claimed. The Examiner has provided mere hindsight as motivation, which is not sufficient to meet the burden of sustaining a 35 U.S.C. §103(a) rejection.

Appellant respectfully submits that the present invention, as defined in the pending independent Claim 1, 10 and 22, surpasses the inventive qualities required under 35 U.S.C. §103(a) in light of any combination of Teraoka and Figures 1 and 2. The Final Office Action fails to present a prima facie case of obviousness under 35 U.S.C. §103(a). Further, it can hardly be tenable to suggest that the invention as claimed can somehow be reached by making an alleged obvious combination of references that do not, alone or together, include a teaching of each of the recitations of the claims themselves. Furthermore, Claims 2-5, 1-9, 11-14, 17-18 and 23-26 are dependent upon one or the other of Claims 1, 10 and 22 and recite even further distinguishing limitations over Teraoka and Figures 1 and 2. Appellants respectfully submit that the rejections under 35 U.S.C. §103 be withdrawn.

IX. CONCLUSION

Appellant submits that the pending claims, Claims 1-5, 8-14, 17-18 and 22-26 are patentable over the art of record and it is respectfully requested that the Board reverse the final rejection of the subject matter of these claims for the reasons given above.

Respectfully submitted,

Karin L. Williams Registration No. 36,721

Certificate of Mail
I hereby certify that this document and attached formal drawings are being deposited with the US Postal Service as first class mail under 37 C.F.R. 1.8 and addressed to: Mail Stop Appeal Brief – Patents; Commissioner for Patents; PO Box 1450; Alexandria, VA 22313-1450 on September 15, 2004

Marjorie L Scariati
(Printed Name of Person Mailing Correspondence)

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251 North Avenue West, 2nd Floor
Westfield, NJ 07090

X. APPENDIX A

The claims involved in the appeal, Claims 1-5, 8-14, 17-18 and 22-26, are reproduced below.

1. (Previously Presented) A method for performing autoconvergence, comprising:

receiving an image having a first aspect ratio and a plurality of sides;

displaying said image on a display having a second aspect ratio and at least one sensor corresponding to each side of said image;

moving said image as a single entire image, without increasing any of the dimensions of said image, so that each sensor can detect said corresponding side of said image.

2. (Previously Presented) The method of claim 1, wherein said first aspect ratio is a 16:9 aspect ratio and said second aspect ratio comprises a 4:3 aspect ratio.

3. (Previously Presented) The method of claim 1, wherein said first aspect ratio is a 4:3 aspect ratio and said second aspect ratio comprises a 16:9 aspect ratio.

4. (Previously Presented) The method of claim 1, wherein said moving comprises:

shifting said single entire image from an initial position towards a first sensor until said first sensor can detect a first side of said image;

shifting said single entire image towards a second sensor until said second sensor can detect a second side of said image; and

shifting said single entire image to said initial position.

5. (Previously Presented) The method of claim 4, wherein shifting said image from an initial position towards a first sensor comprises:

measuring a first vertical height and a horizontal width for said display;

defining a digital step, indicating a predefined number of centimeters per step, for said display;

determining a distance between said first side and said first sensor using the measurements obtained in said measuring step;

determining a number of digital steps corresponding to said distance; and

shifting said image said number of digital steps.

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The method of claim 2, wherein said image has a top side and a bottom side and said display has a top sensor and a bottom sensor, wherein said moving comprising moving said image so that said top sensor can detect said top side, and said bottom sensor can detect said bottom side.

9. (Previously Presented) The method of claim ~~2~~ 3, wherein said image has a left side and a right side, and said display has a left sensor and a right sensor, wherein said moving comprising moving said image so that said left sensor can detect said left side, and said right sensor can detect said right side.

10. (Previously Presented) A machine-readable medium whose contents cause a computer system to perform autoconvergence by performing the acts of:

receiving an image having a first aspect ratio and a plurality of sides;

displaying said image on a display having a second aspect ratio and at least one sensor corresponding to each side of said image;

moving said image as a single entire image, without increasing any of the dimensions of said image, so that each sensor can detect said corresponding side of said image.

11. (Previously Presented) The machine-readable medium of claim 10, wherein said first aspect ratio comprises a 16:9 aspect ratio and said second aspect ratio ~~is~~ comprises a 4:3 aspect ratio.

12. (Previously Presented) The machine-readable medium of claim 10, wherein said first aspect ratio comprises a 4:3 aspect ratio and said second aspect ratio ~~is~~ comprises a 16:9 aspect ratio.

13. (Previously Presented) The machine-readable medium of claim 10, wherein said moving comprises:

shifting said single entire image from an initial position towards a first sensor until said first sensor can detect a first side of said image;

shifting said single entire image towards a second sensor until said second sensor can detect a second side of said image; and

shifting said single entire image to said initial position.

14. (Previously Presented) The machine-readable medium of claim 13, wherein shifting said image from an initial position towards a first sensor comprises:

measuring a first vertical height and a horizontal width for said display;

defining a digital step, indicating a predefined number of centimeters per step, for said display;

determining a distance between said first side and said first sensor using the measurements obtained in said measuring step;

determining a number of digital steps corresponding to said distance; and

shifting said image said number of digital steps.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) The machine-readable medium of claim 11, wherein said image has a top side, a bottom side, a left side and a right side, and said display has a top sensor and a bottom sensor, with said moving comprising moving said image so that said top sensor can detect said top side, and said bottom sensor can detect said bottom side.

18. (Previously Presented) The machine-readable medium of claim 11, wherein said image has a top side, a bottom side, a left side and a right side, said display has a left sensor and a right sensor, with said moving comprising moving said image so that said left sensor can detect said left side, and said right sensor can detect said right side.

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Previously Presented) A method comprising:

displaying an image having a first aspect ratio on a display having a second aspect ratio, said first and second aspect ratios being different, said display comprising a first sensor positioned at a first side and a second sensor positioned at a second side opposite said first side; and

moving said image as a single entire image, without increasing any of the dimensions of said image, so that said first and second sensors detect said image.

23. (Previously Presented) The method of claim 22, wherein said first aspect ratio is a 16:9 aspect ratio and said second aspect ratio comprises a 4:3 aspect ratio.

24. (Previously Presented) The method of claim 22, wherein said first aspect ratio is a 4:3 aspect ratio and said second aspect ratio comprises a 16:9 aspect ratio.

25. (Previously Presented) The method of claim 23, wherein said image has a top side and a bottom side, and said display has a top sensor and a bottom sensor, wherein said moving comprising moving said image so that said top sensor can detect said top side, and said bottom sensor can detect said bottom side.

26. (Previously Presented) The method of claim 24, wherein said image has a left side and a right side, and said display has a left sensor and a right sensor, wherein said moving comprising moving said image so that said left sensor can detect said left side, and said right sensor can detect said right side.